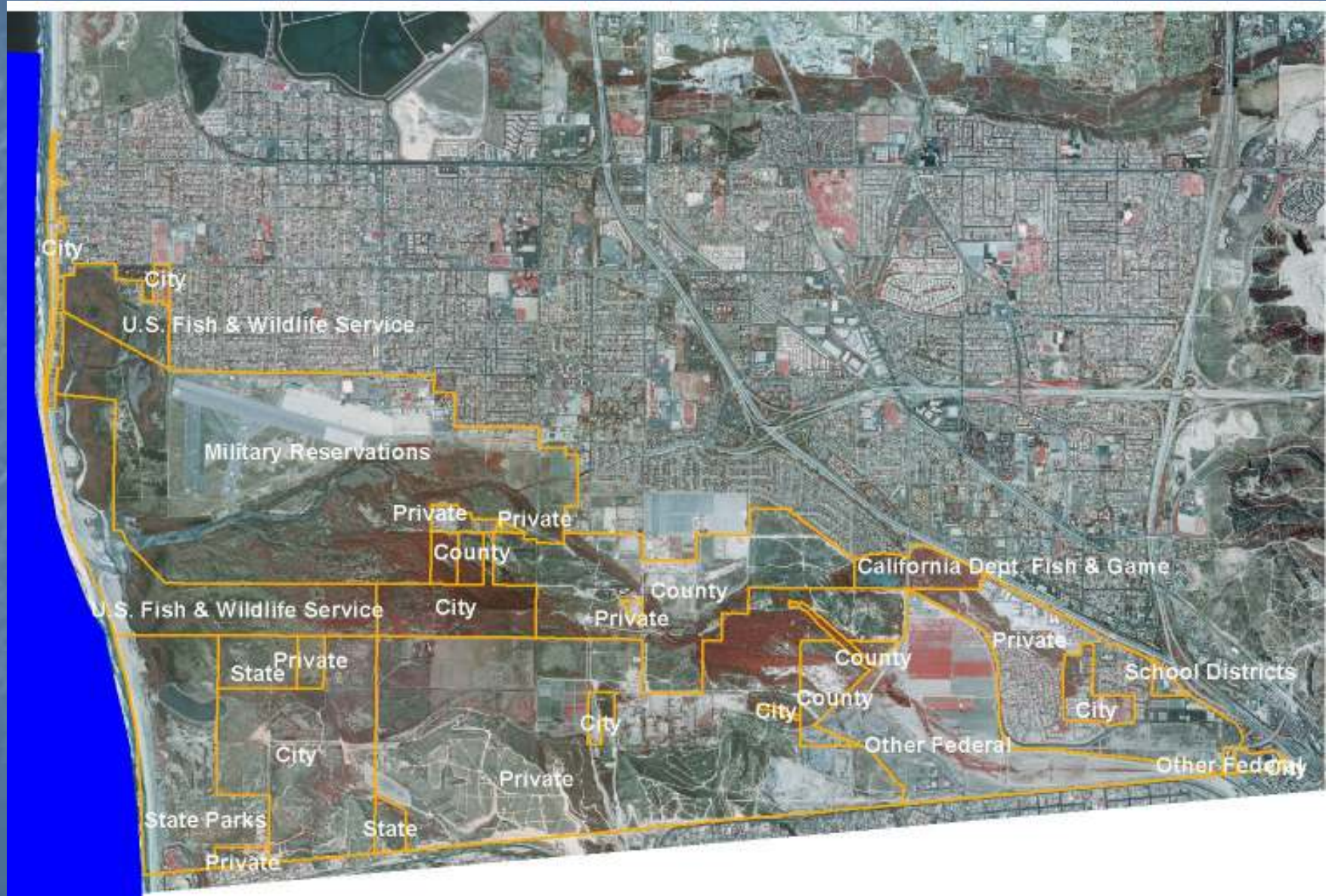


The Tijuana River Valley

Biodiversity Threatened
Challenges and Opportunities

The Tijuana River Valley



The Tijuana River



The Tijuana River Watershed



- Tijuana River NERR
- U.S.-Mexico Border
- Watershed Boundary
- Rivers



0 5 10 20
Miles

Description: Map Background is a 2000 SPOT Multispectral Satellite Image at 10 meter resolution. Image is displayed in color-infrared: live vegetation appears red, urban areas appear white or light blue/grey, rock and bare soil are greenish grey. Cartography by: Kevin Casey Cody

Pacific Ocean

The National Estuarine Research Reserve System was established to... provide long-term protection of reserve resources.



Importance of TRNERR

Located on the Pacific Flyway, more than 370 bird species have been sited here.



Home to threatened & endangered wildlife, including the Western Snowy Plover and the Light-Footed Clapper Rail.



Birds of the Tijuana River Valley

California
Least
Tern



Clapper
rails
build
their
nests in
cord
grass



American
Bittern



Clapper
rail
fledgling
in nest



Carnivorous Birds Found in the Estuary



American
Kestrel



Harrier
Chick



Red-Tailed
Hawk



Burrowing
Owl

Life History of the Least Tern



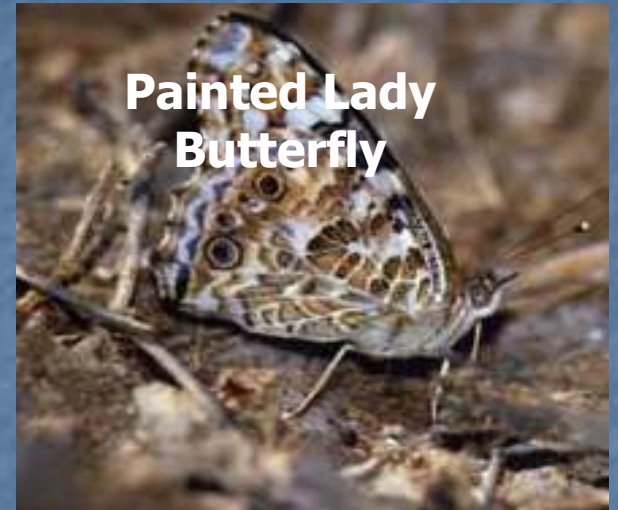
Species found at the Tijuana River Valley



Garter Snake



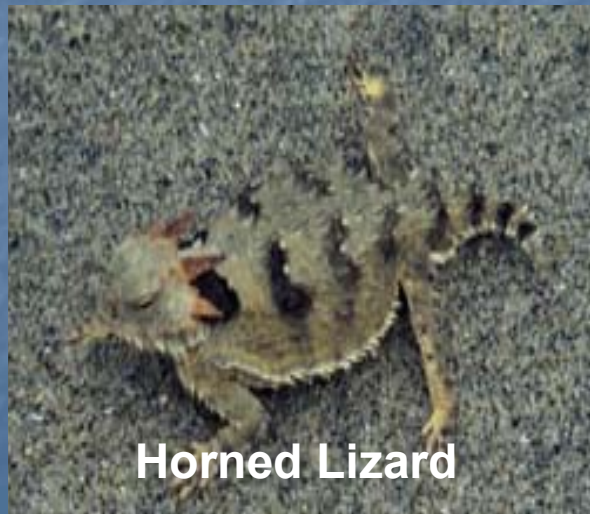
Dudleya



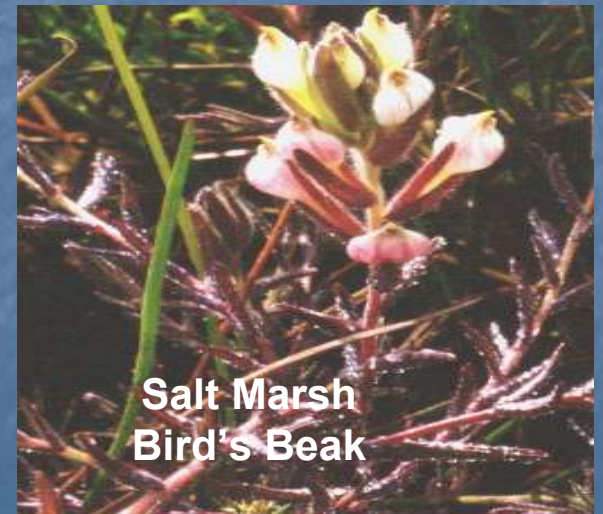
**Painted Lady
Butterfly**



Coastal Prickly Pear



Horned Lizard



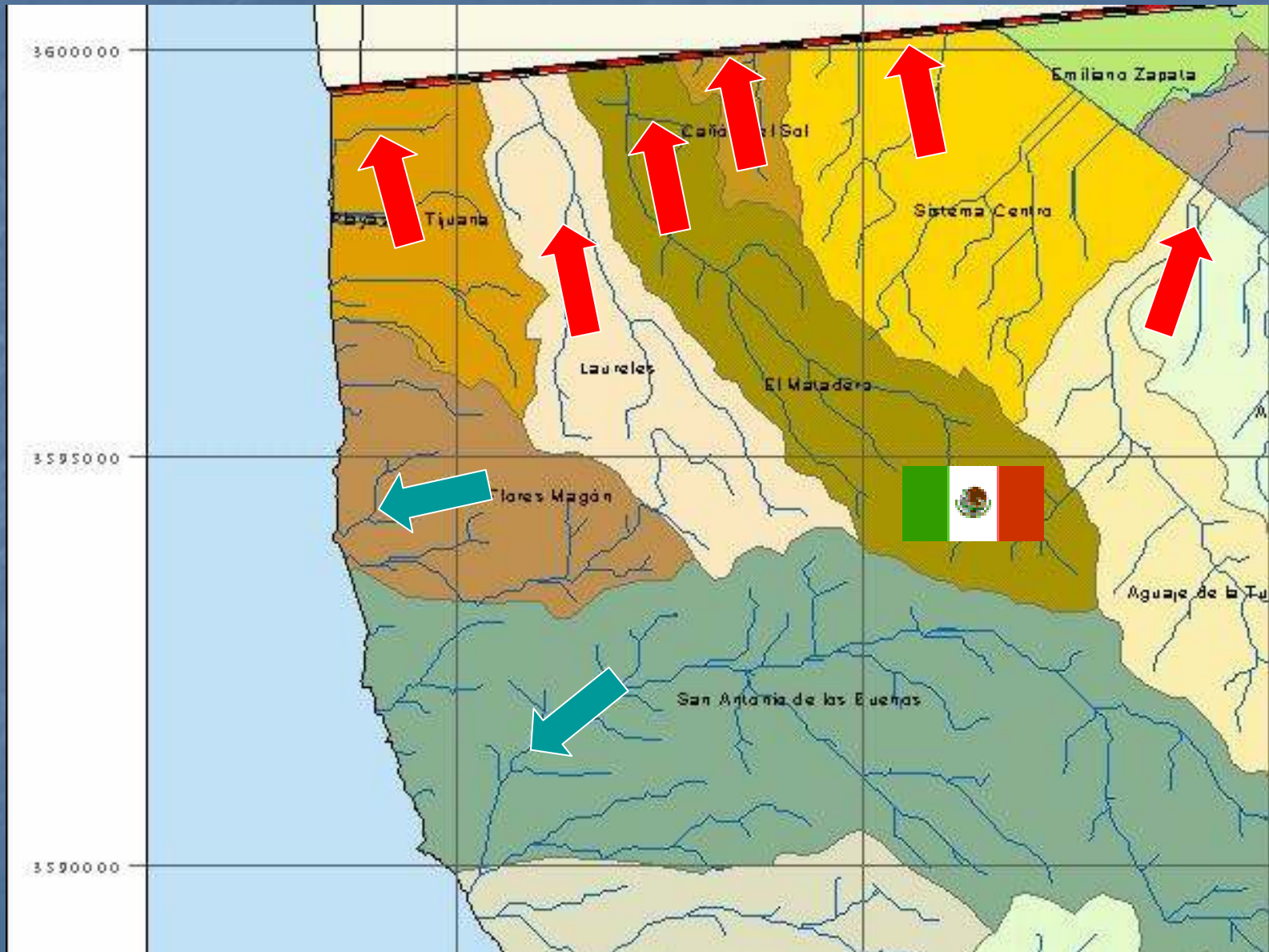
**Salt Marsh
Bird's Beak**

Threats

Threats to the Tijuana River Valley



Tijuana River Watersheds Sub-Basin flows



Threats to the Tijuana River Valley



Pollution causes beach closures for over half the year.



Trash collects at Border Field State Park when it rains in the watershed.





Strategies

Working at the Source

Sediment Control

Present Situation

Smugglers Gulch and Goat canyon, are regularly impacted by alluvial sediments and pollutants transported by storm water from Mexico. This flows diminished wetland habitat in the TRNERR

Vision

Develop low cost, pilot projects to reduce erosion at the source, identify appropriate sites, to build and maintain sediment basins in Mexico. Help create public policies and city ordinances for erosion control in Mexico

Objectives

- 1.- Develop alternative slope stabilization measures in the selected areas as examples of good practices
- 2.- Work with the Tijuana city council to develop city ordinances and modifications to the present construction codes
- 3.- Identify funding sources and political support for the construction of Sediment Basins at selected sites in the watershed





Sewer

Present Situation

Untreated sewage has created a series of human health and environmental problems impacting communities downstream both in Mexico and the U.S.

Vision

Establish an alternative plan to bring sanitation services to communities without access to basic infrastructure to minimize impacts to human health and to ensure environmental

Objectives

- 1.- Develop a "condominal" pilot project on a selected site to demonstrate its feasibility
- 2.- Seek a technical partner to develop the engineering design
- 3.- Obtain the discharge permits from the appropriate authorities
- 4.- Operate the system in partnership with the water authority





Trash

Present Situation

Tire and trash accumulation is severe and is threatening natural resources throughout the Tijuana River Valley. Last year, over 4000 tires were collected at the mouth of Goat Canyon, located at the TRNERR

Vision

Establish a trash and tire recycling program in Mexico to eliminate flows of debris into the Tijuana Estuary. Develop public policies and agreements between Mexico and the California integrated Waste Management Board.

Objectives

- 1.- Improve trash collection in Mexico
- 2.- Develop mechanisms for cleaning trash and tires so they can be recycled
- 3.- Develop mechanisms for limiting the spread of trash as it reaches the Tijuana Estuary, making it easier to collect
- 4.- Help develop city ordinances in Tijuana for the appropriate use of tires for retaining walls





Conservation Easements

Present Situation

Canyons, creeks and flood planes, subject to rapid degradation are being rapidly urbanized. As these areas are not suitable for development, loss of habitat and soil create hazardous conditions.

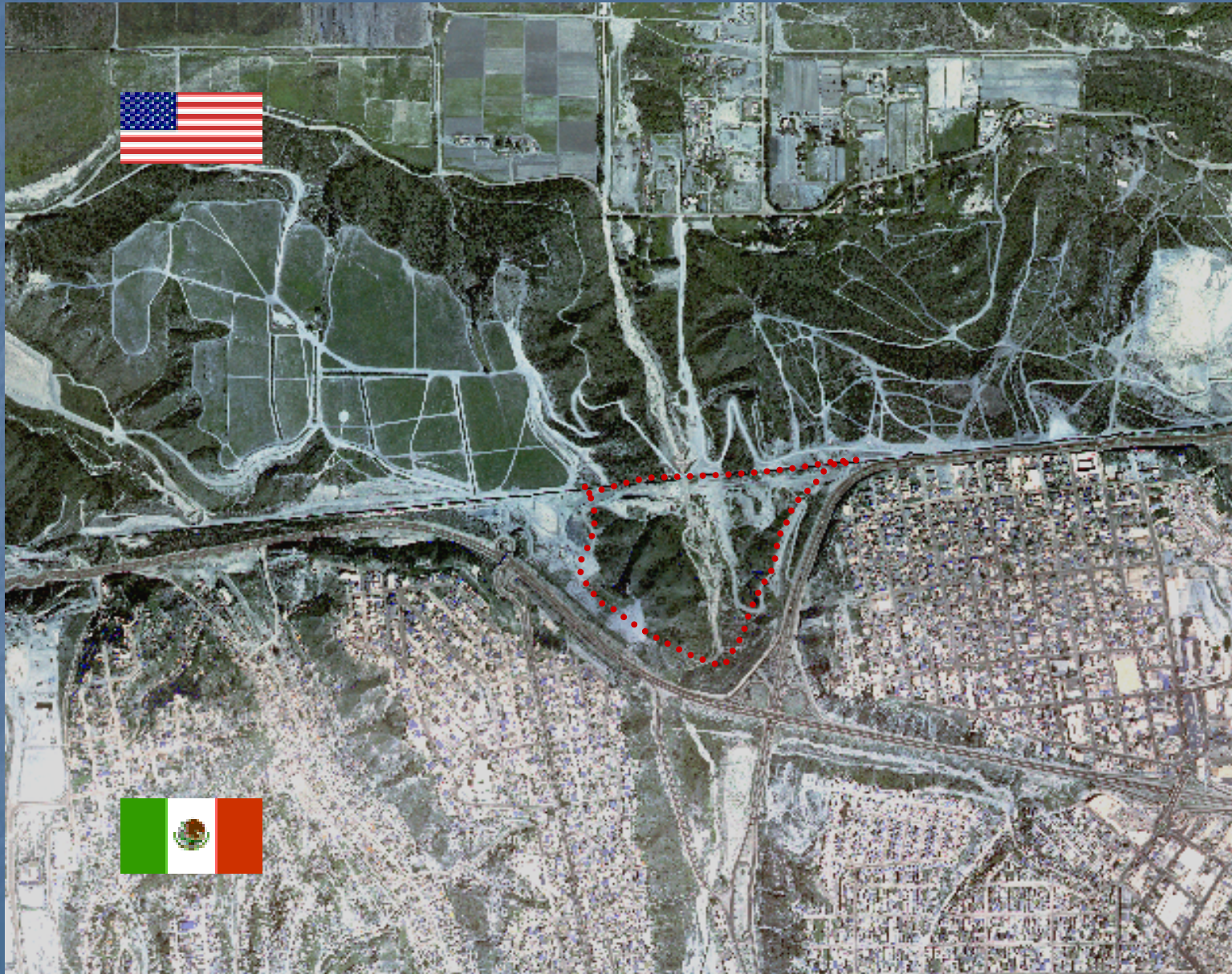
Vision

Create several conservation easements at selected sites to help maintain the ecological character of sensitive areas as well as to reduce environmental degradation of the watershed.

Objectives

- 1.- Identify potential sites for conservation easements in the vicinity of the Tijuana Estuary
- 2.- Obtain the "Conservation Easement" designation from the appropriate authorities in Mexico, the State of Baja California and "Open Space" designation from the Tijuana City Council.
- 3.- Establish management plans for the easements
- 4.- Seek further levels of protection from national and international agencies.

Matadero/Smugglers Gulch Project





Regional Planning

Present Situation

Unplanned urbanization, lack of functional and spatial articulation, lack of basic infrastructure conditions of marginality and extreme poverty, create unprecedented environmental degradation

Vision

A plan for urban improvement based on geographical features (i.e. watershed boundaries), will potentially change the perception of urban planning, and city ordinances, to identify and conserve ecologically fragile areas

Objectives

- 1.- Assess the physical elements that constitute the natural subsystem
- 2.- Prevent, control, correct and or reverse imbalances in the natural subsystem
- 3.- Establish a spatial definition to define appropriate land uses
- 4.- Create a risk and vulnerability index for the region (sub-basin)
- 5.- Strengthen the mechanisms of interaction between government and civil society
- 6.- Turn recommendations into public policies



LA ZONA DE ESTUDIO

